GENERAL BUILDING-AUTHORITY TEST CERTIFICATE

EASY GLASS® UP

TOP
FASCIA INVERS

For any questions about this certificate, please contact:

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Labor für Stahl- und Leichtmetallbau GmbH

Management: Prof. Dr. - Ing. Ö. Bucak
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Bay 27

General building-authority test certificate

Test certificate number:	**P-2022-3013**
Object:	linearly mounted compound safety glazing
System:	**EASY GLASS UP**
Intended purpose:	Barrier according to DIN 18008-4 Administrative instructions Technical Building Regulations for Nordrhein-Westfalen (VV TB NRW) Version 2019/01 Type of construction acc. to C 4.12
Barrier category:	**B**
Applicant:	**Q-railing Europe GmbH & Co. KG** Marie-Curie-Straße 8 - 14 46446 Emmerich am Rhein
Date of issue:	25.02.2022
Valid until:	24.02.2027

This general building-authority certificate conforms that the object named above can be used in accordance with the State Building Code.

The general building-authority test certificate consists of 9 pages and 3 appendices.

I. General regulations

1. The general building-authority test certificate does not replace the permits, approvals and certificates legally required for construction projects.
2. The general building-authority test certificate is issued without affect the rights, especially private property rights, of third parties.
3. Regardless of additional regulations under "Special regulations", the manufacturer of the design must provide the user of the construction with copies of the general building-authority test certificate and point out that the general building-authority test certificate must be available at the location of use. Upon request, the authorities involved must be provided with copies of the general building-authority test certificate.
4. The general building-authority test certificate must only be reproduced in its unshortened version. Publication in parts requires the approval of the Labor für Stahl- und Leichtmetallbau GmbH. Texts and drawings of advertising must not contradict the general building-authority test certificate. Translations of the general building-authority test certificate must contain the note "This translation of the German original version was not reviewed by the Labor für Stahl- und Leichtmetallbau GmbH".

II. Special regulations

1. Object and scope of application

1.1 Object

The object of the general building-authority test certificate is the glass barriers system Easy Glass Up according administrative instructions Technical Building Regulations for Nordrhein-Westfalen (VV TB NRW) Version 2019/01 sold by Q-railing Europe GmbH & Co. KG. The glass panels are linearly clamped at the lower edge and connected with a handrail profile at the upper edge of the glass panel. The glass panels can be installed at a tilt of up to 10° from the vertical..

1.2 Scope of application

The object named above is used in accordance with DIN 18008-4, Additional requirements for barrier glazing according to **Category B**.

1.3 Basis of this certificate

Basis for this test certificate are the test reports 2017-3011 and 2021-3006.

LABOR FÜR STAHL- u. LEICHTMETALLBAU GMBH (05)

2 Requirements for the design

2.1 Description of the construction

2.1.1 Mounting

The glazing is mounted linearly at the lower horizontal glass edge. The admissible mounting profiles are presented in appendix 1 and 2. The profile is presented as an example in the following figure.

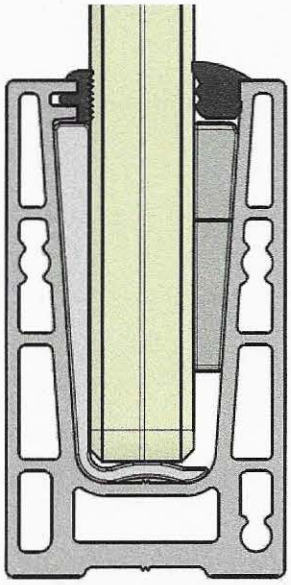


Fig. 1: Easy Glass Up profile

The clamping of the glass is achieved by inserting plastic wedges. Impacts may occur from both sides of the glass panel.

The aluminium profiles are fixed on reinforced concrete using chemical anchors from Q-railing (Q VMZ-IG M12) or mechanical anchors (Q SZ-S12), or attached at steel constructions using M12 screws. Alternatively, other suitable fastening means can also be used.

At the upper edge of the glass, the panels are connected with a continuous handrail profile. The profile must fulfil the specifications for static dimensioning according to DIN 18008-4, section 6.1.

As an alternative to the attached profile, the handrail can also be fastened at points as shown in Appendix 3.

2.1.2 Glazing

The following glass constructions can be used:

Glass built up 1:

tempered glass (ESG)	6,00 mm
PVB interlayer	0,76 mm
tempered glass (ESG)	6,00 mm
total glass thickness	**12,8** mm

Glass built up 2:

tempered glass (ESG)	8,00 mm
PVB interlayer	0,76 mm
tempered glass (ESG)	8,00 mm
total glass thickness	**16,8** mm

Glass built up 3:

heat strenghtened glass (ESG)	8,00 mm
PVB interlayer	0,76 mm
heat strenghtened glass (ESG)	8,00 mm
total glass thickness	**16,8** mm

Only glass products in accordance with DIN 18008-4 may be used. The glass and film thicknesses listed above may be exceeded or heat soaked glass may be used.

All glass constructions with intermediate layers with an appropriate general building-authority certificate may be used as laminated sheet glass.

2.2 Test procedure to be used

The test of the barrier function of the glazing was done according to Appendix A of DIN 18008-4. The bearing capacity under impact loading was tested for the standard dimensions of the described glazing using the pendulum impact test.

2.3 Use, maintenance and service

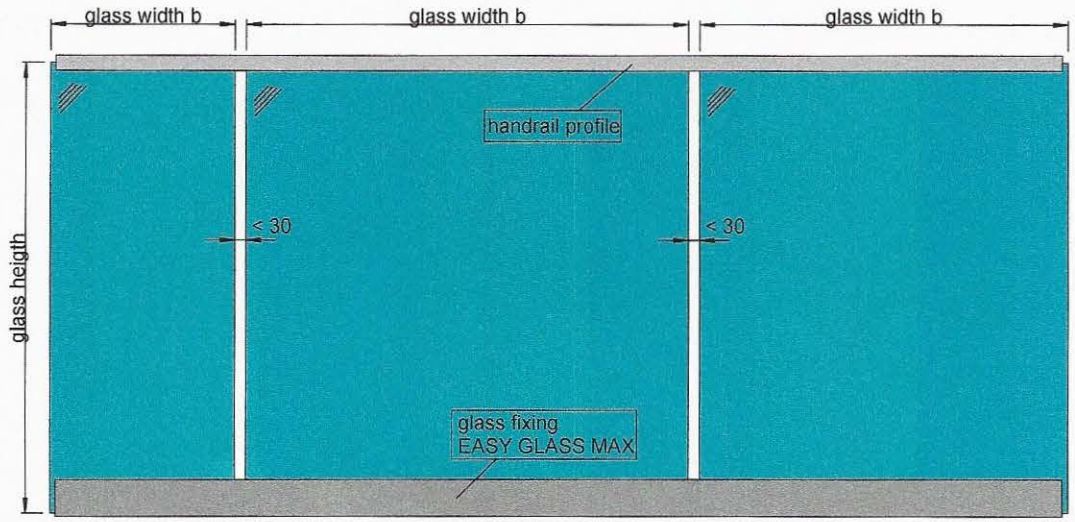
The construction must be mounted and secured using suitable measures in such a way that it meets the specified requirements as barrier permanently. The proof of secure anchoring of the glazing construction at the building must follow the applicable technical building regulations.

3. Validity and specifications for dimensioning

3.1 Area of application

The general building-authority test certificate is valid for the design described in section 2. The glazing has a barrier function according to category B. The admissible dimensions for the corresponding installation situation are specified in the following tables and figures.

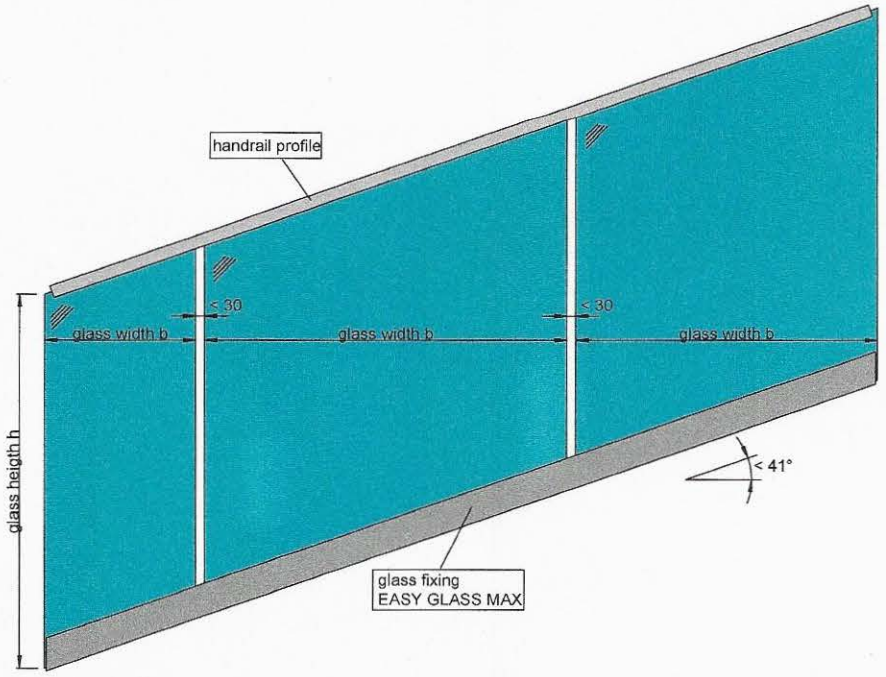
Straight installation:



The following dimensions were proven in tests:

Table 1: admissible dimensions for straight installation

Deviations from rectangular shape (flight of stairs):

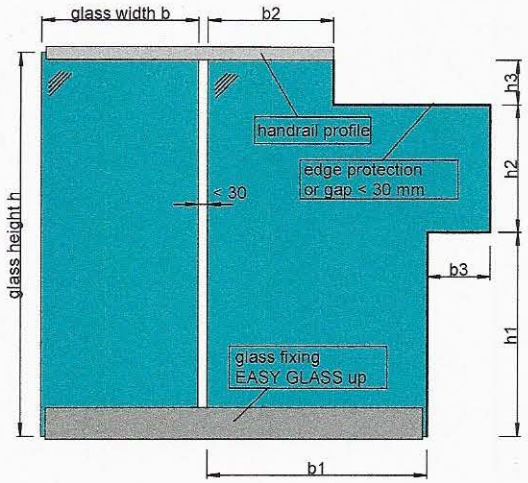


The following dimensions are attested by tests:

Table 2: admissible dimensions for a flight of stairs

glass built up		Glasswidth b [mm]		Glassheight [mm]	
		min	max	min	max
1	2 x 6 mm ESG	500	any	500	700
	2 x 6 mm ESG	1000	any	500	900
2	2 x 8 mm ESG	500	any	500	900
3	2 x 8 mm TVG	500	any	500	900

Model panel:

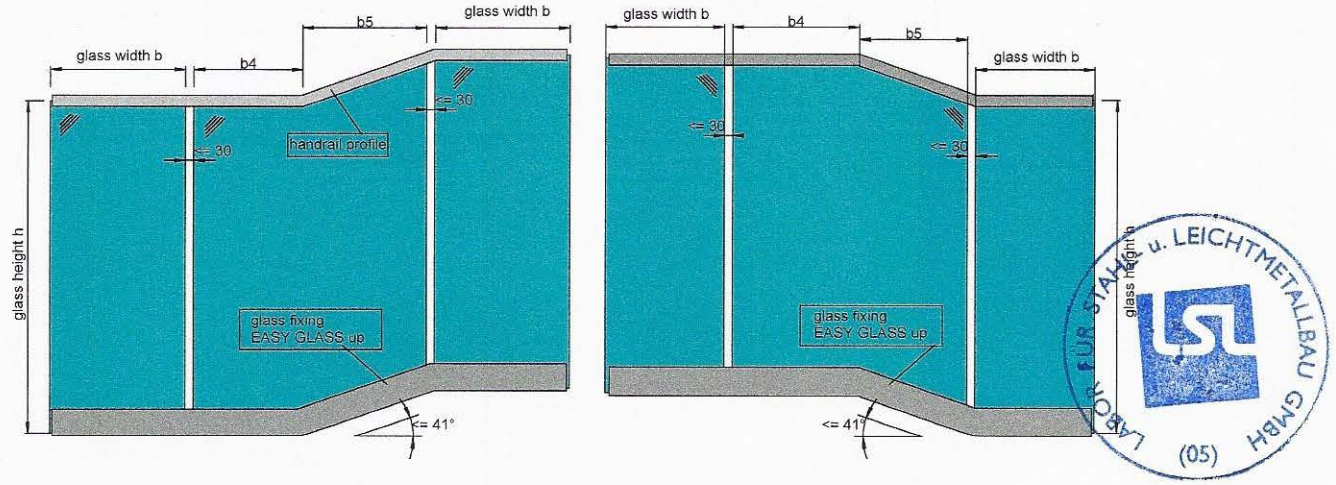


The following dimensions are attested by tests:

Table 3: admissible dimensions for a model panel

glass built up		b1 [mm]		b2 [mm]		b3 [mm]	Glassheight [mm]	h1 [mm]	h2 [mm]	h3 [mm]
		min	max	min	max	max	max			max
1	2 x 8 mm ESG	700	any	400	b1 + b3	300	900	any	any	300

Transition panel:



The following dimensions are attested by tests:

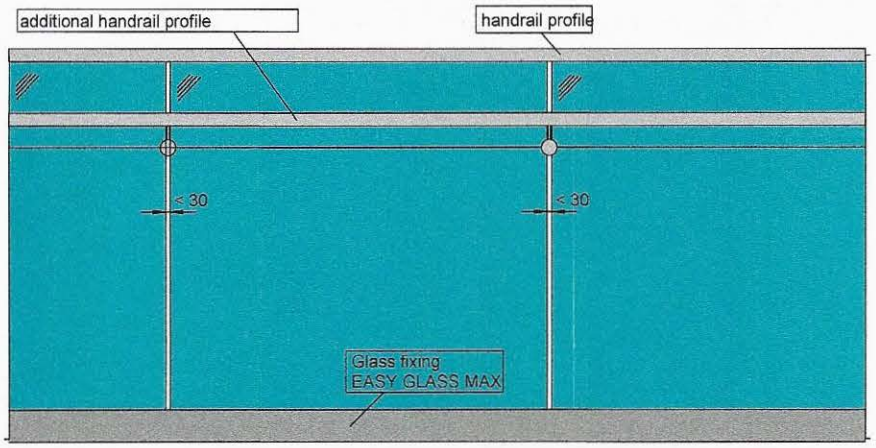
Table 4: admissible dimensions for a transition panel

glass built up		b4 [mm]		b5 [mm]		glass height [mm]
		min	max	min	max	max
1	2 x 8 mm ESG	250	any	250	any	900

Other constructive specifications:

- At least 2 panels with the smallest glass width must always be installed
- If the handrail is anchored at the end, the glass barrier may also consist of one panel.
- The specifications of Q-railing must be observed for the arrangement of the plastic wedges
- An additional, constructive handrail can be used, which is attached in the gaps between the panels using clamp holders (see following figure).

Additional, constructive handrail



3.2 Dimensions

For the application, a calculated proof of bearing capacity under static load according to DIN 18008-4, section 6.1 must be provided for the glazing and mounting constructions.

4. Declaration of conformity

The design described in this general building-authority test certificate requires a declaration of conformity by the user (contractor) in accordance with Building Regulations List A part 3. In this document, the contractor declares for the client that the described design complies with this general building-authority test certificate in all details.

5. Associated regulations

The provisions of DIN 18008-4, Additional requirements for barrier glazing, must be considered for the descriptions. Furthermore, the following standards and information sheets in their current version are referenced:

[a] Building code for Land Nordrhein-Westfalen (BauO NRW) Fassung 2018/07

[b] Administrative instructions Technical Building Regulations for Nordrhein-Westfalen (VV TB NRW) Version 2019/01

[c] DIN EN 14449; Glass in building - Laminated glass and laminated safety glass

[d] DIN 572, Part 1-2; Glass in building - Basic soda lime silicate glass products

[e] DIN 12150, Part 1; Glass in building - Thermally toughened soda lime silicate safety glass

[f] DIN 14179, Part 1; Glass in building – Heat Soaked thermally toughened soda lime silicate safety glass

[g] DIN EN 1863, Part 1; Glass in building - Heat strengthened soda lime silicate glass

[h] DIN 18008, Part 1-2; Glass in Building - Design and construction rules

[i] Test report 2017-3011; impact tests according to DIN 18008-4; Labor für Stahl und Leichtmetallbau GmbH from 01.02.2017

[j] Test report 2021-3006; impact tests according to DIN 18008-4; Labor für Stahl und Leichtmetallbau GmbH from 26.01.2021

III. Legal basis

This general building-authority test certificate was issued based on § 22 of the building code for Land Nordrhein-Westfalen (BauO NRW) Fassung 2018/07.

IV. Instruction on right to appeal

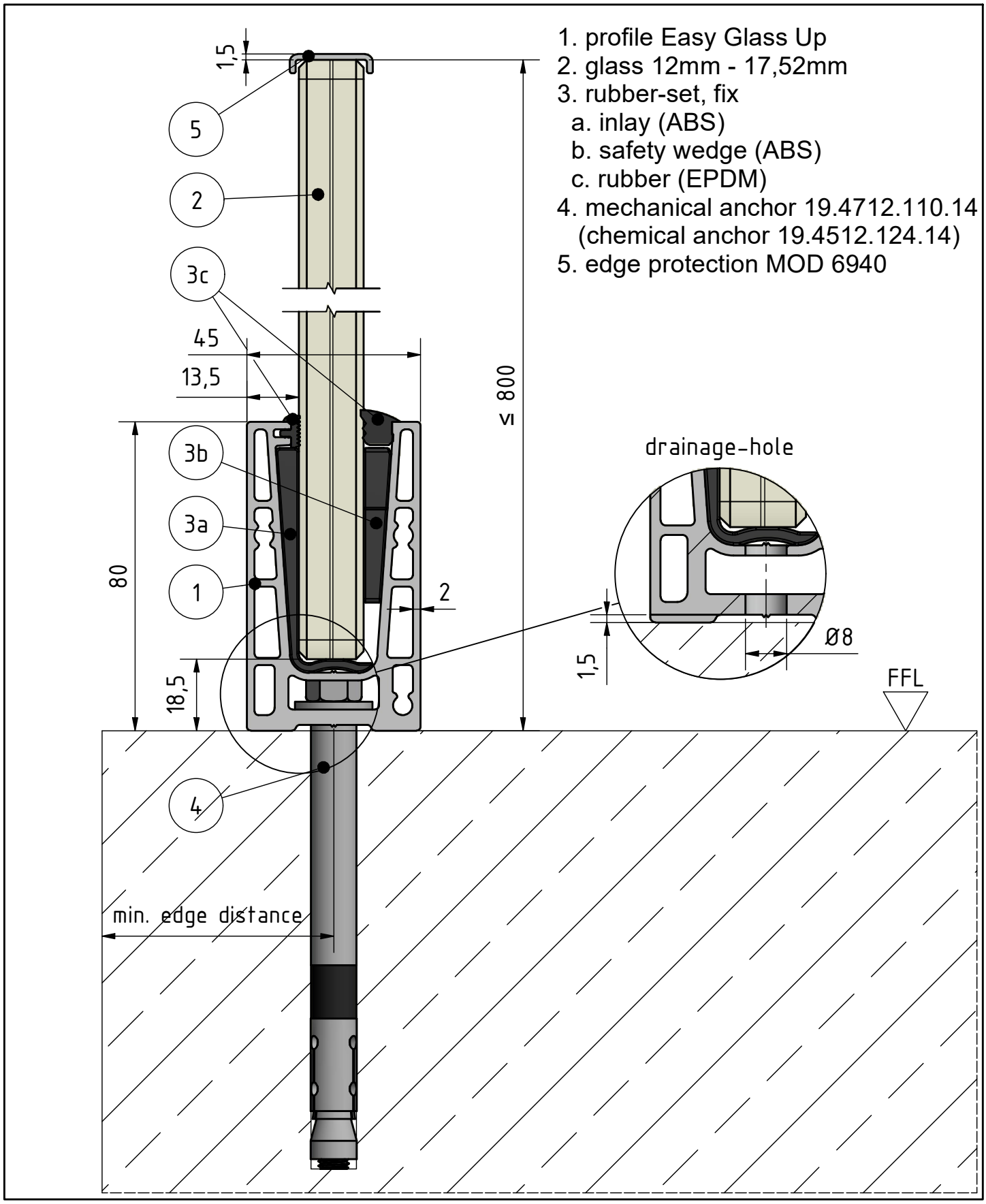
This general building-authority test certificate can be appealed within one month after issue. The appeal must be submitted in writing or for recording at the Labor für Stahl- und Leichtmetallbau GmbH.

Kissing, 25.02.2022

For the management and person in charge of the case

LABOR FÜR STAHL- u. LEICHTMETALLBAU GMBH

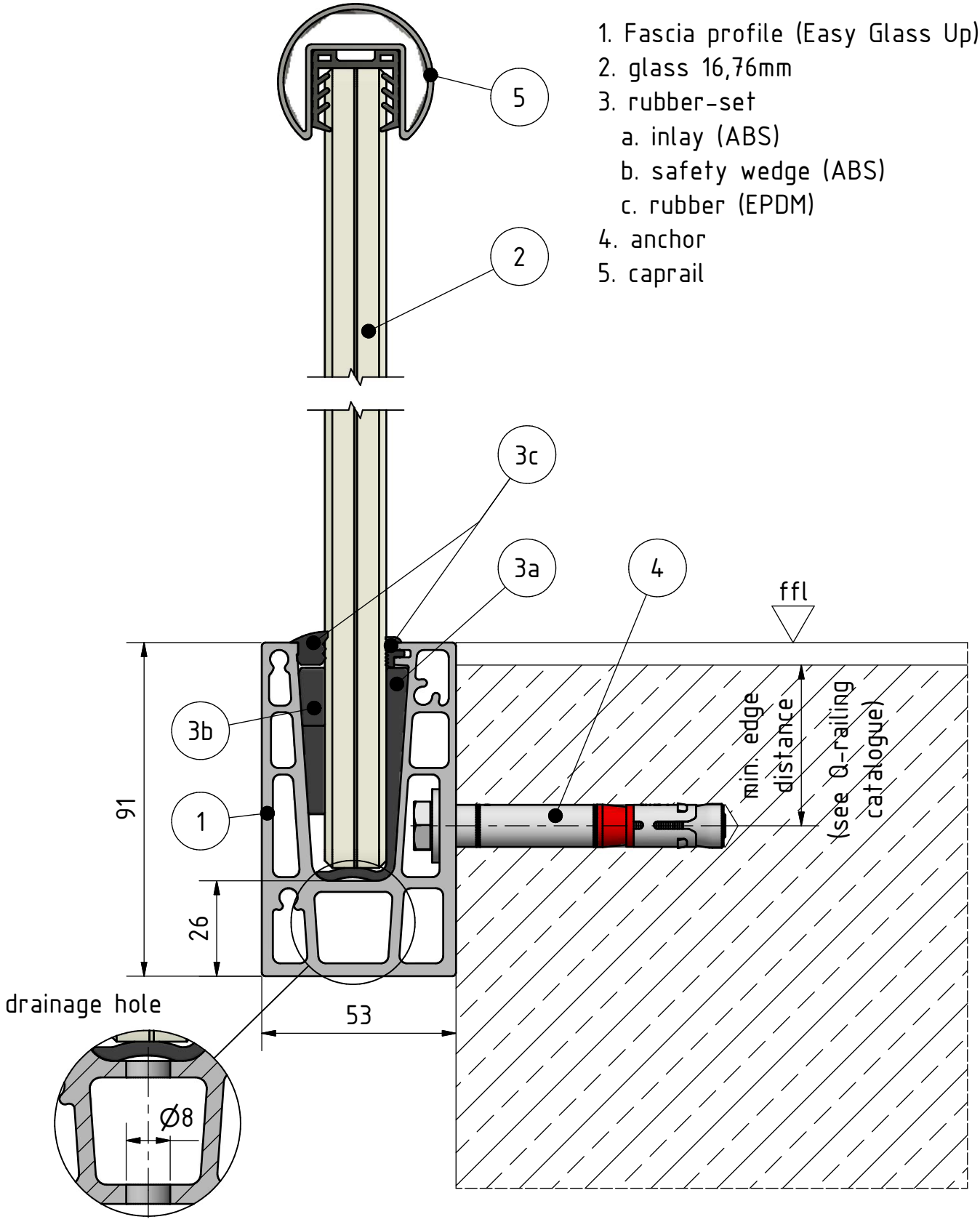
Dipl. -Ing. (FH) A. Lorenz



SYSTEM:	**Easy Glass Up**
MODEL:	**6924**
DESCRIPTION:	**top mount**
DRAWN:	MPS
DATE:	02.11.2016
DRAWING NO.:	6924-001

This detail drawing is for reference purposes only. The installer must check the specifications and details with the local situation and regulations. For further advice and service please contact your nearest Q-railing office.

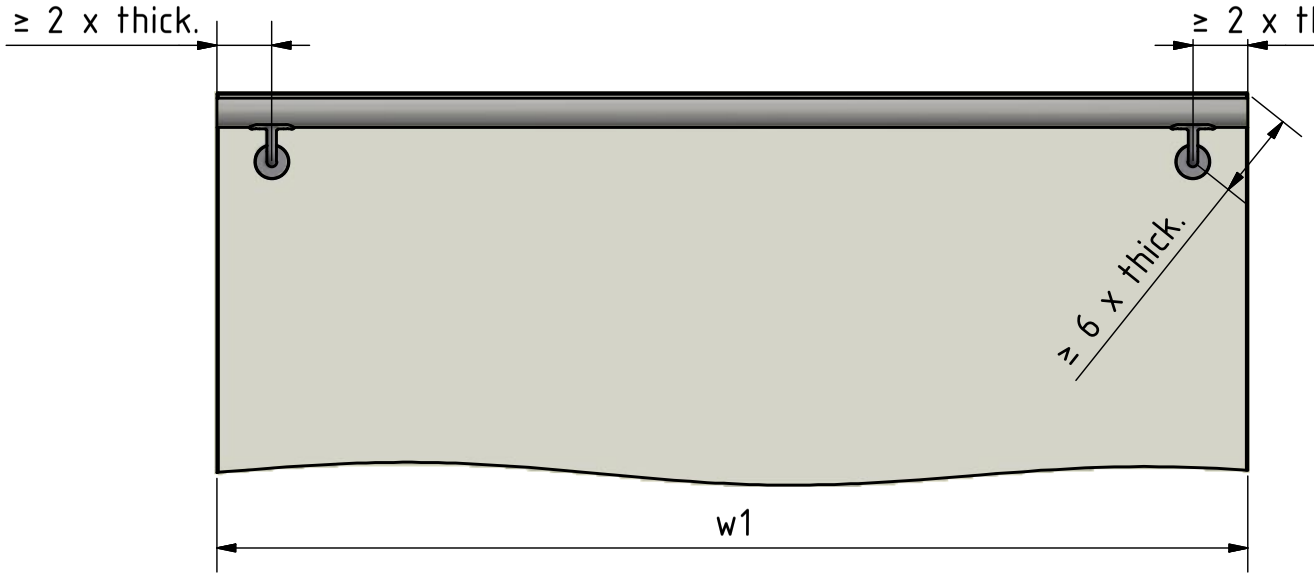
Q-railing



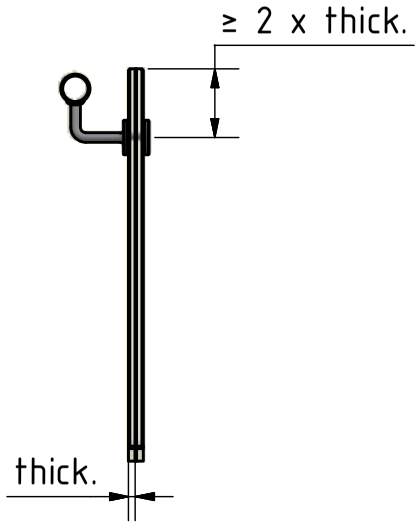
SYSTEM:	**Easy Glass Up**
MODEL:	**6620**
DESCRIPTION:	**Fascia mount**
DRAWN:	LMR
DATE:	21.01.2021
DRAWING NO.:	6620-002

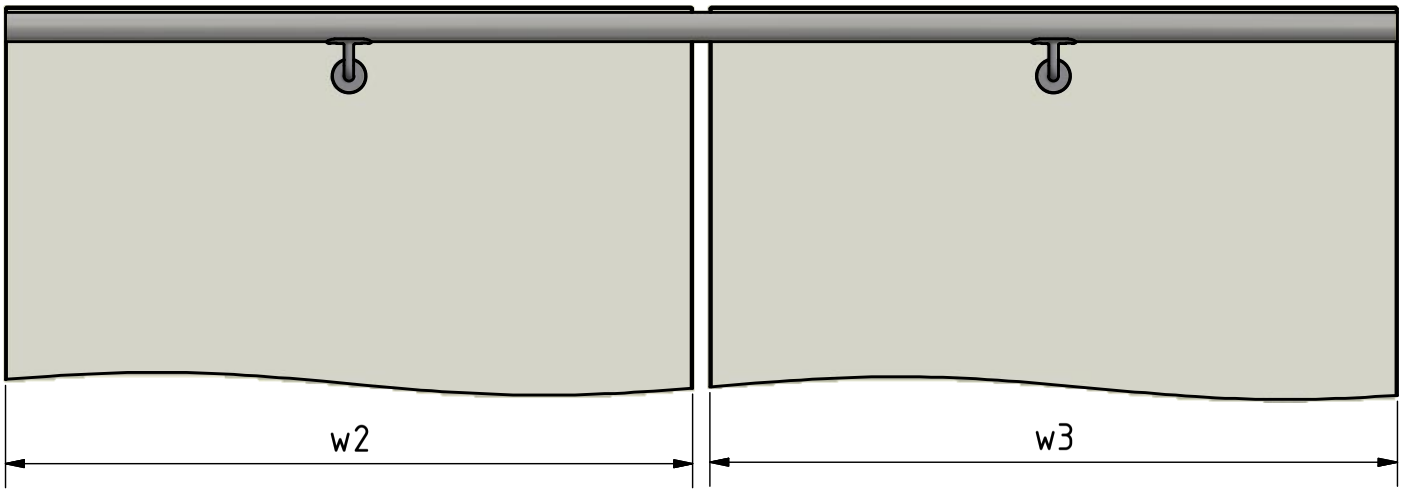
This detail drawing is for reference purposes only. The installer must check the specifications and details with the local situation and regulations. For further advice and service please contact your nearest Q-railing office.

Q-railing



option 1





option 2

1			
REV	DESCRIPTION	DRAWN	DATE

Q-railing

	Date	Name
Drawn	04.07.2019	chx
Checked		

General tolerance according

Scale: 1 : 11 | Weight: N/A | Rev.No.: 0

Material:

Finish:

Product line:

Description:

Drawing no.: handrail_fixed_in_glass_op

Project:

Sheet: 1 / 1 | A4

GOOD LUCK WITH
YOUR INSTALLATION!

VIEL ERFOLG MIT
IHRER MONTAGE!

SUCCES MET
DE INSTALLATIE!